RehabWorks

18 Holes of Injury Prevention

By: Erik T. Nason, MS, ATC/L

As a Certified Athletic Trainer in the RehabWorks program, I have a lot of individuals stopping by my office looking to find some advice of how to gain control over an injury. Many come and go and recover with no problems, but the biggest concern of individuals is being able to continue their activities of daily living, (ADL). Not surprisingly, the activity most dreaded to be discontinued seems to be…golfing. I hear it a hundred times; "When will I be able to play golf again?" "Is this injury going to cause pain during my golf swing?" Well about a week ago I went golfing for the first time and found out that golfing affects the whole body. Not only is proper form important to be successful but so is proper strength and flexibility.

A golf swing is such an explosive motion where high amounts of torque are placed on the muscles of the wrists, arms, shoulders, trunk and legs. In order to prevent injuries from occurring, golfers need to participate in a total body conditioning program. A recent article in The Physician and Sportsmedicine Journal, by Dr. John Metz sites a survey done among amateur golfers (avg. of 2 rounds of golf a week). The most common sites of injury were lower back (men-36%, women 27.4%), elbows (men 32.5%, women 35.5%), hands/wrists (men 21.2, women 14.5) and shoulders (men 11%, women 16.1%). During a golf swing, the lumbar spine is subjected to forces of side to side bending, front to back shearing, compression, and rotation. An amateur will reach 90% of their peak muscle activity during a golf swing. Amateurs' greater spinal loading and muscle activity during the swing are mainly caused by poor swing mechanics, which only increase the loads as they swing harder, instead of more skillfully, to hit the ball farther.

Figure 1.

Shoulder pain in golfers is usually caused by overuse activities rather then a traumatic event. Metz states that during a golf swing the front (leading) shoulder is subject to an extreme range of motion (ROM). In a study of 35 competitive golfers who had shoulder pain, 34 (97%) had shoulder pain in the leading shoulder. Pain in the front side of the golfer's leading shoulder is usually caused by degenerative changes in the AC (acromio-clavicular) joint or by impingement. (See fig. #1)

Figure 2.

"Golfer's Elbow", medically known as medial epicondylitis, is the injury commonly found in the elbow area, (See Fig. #2). The trailing arm of a golfer's swing is where medial (inside of elbow) epicondylitis occurs and in the leading arm, lateral (outside of elbow) epicondylitis is common. Lateral epicondylitis is 5 times more common than medial. These conditions are frequently caused by excessive overuse and extended gripping. Proper grip strength is very important so that the forearm muscles contract and move smoothly across bony structures during rotation motions of the forearm. During a golfer's swing the tendons of the forearm muscles are rapidly rubbing over the bony prominences in the elbow, causing epicondylitis in the elbow. Proper grip and forearm strength can prevent epicondylitis from occurring.

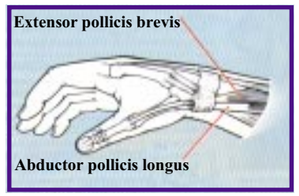

Figure 3

Last, but not least, the wrists. Golfers can develop wrist tendon disorders such as de Quervain's disease, which is the irritation to the abductor pollicis longus and the extensor pollicis brevis (see fig. #3). Take your hand and open it as wide as possible by extending your fingers. Look at the base of your thumb, on the back of your hand, where you should see these two tendons standing out as they go across the wrist joint. The reason these tendons are irritated is because of excessive motion in the wrists during a swing, which causes a pinching motion on the tendons. Once again, forearm strengthening should help reduce undue wrist motion during a swing.

Now, remember I am not a golfing pro. I don't even think I would call myself an amateur (Happy Gilmore), but if you participate in a strengthening and flexibility program I am confident that you will reduce the chance of injury which just might make your score more impressive. For a complete guide to basic strengthening protocols check out our website at http://rehabworks.ksc.nasa.gov or stop by the RehabWorks office in the O&C Building room 1103. If for some reason you feel that you do not have the time for exercise and conditioning then I suggest you set your goals to receive the free game on the 18th hole of your local putt-putt. Enjoy Life-Exercise Hard.

Reference: Metz, John P., Managing Golf Injuries, The Physician and Sportsmedicine. July 1999; pp41-56.

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Working Together to Launch a New You

Synergy

KSC FITNESS CENTER

July/August

KSC Fitness Center Activities

JULY

Organ and Tissue Donation Awareness Month

Desktop Yoga: Are you suffering from aches and pains associated with working at a computer or sitting at a desk? Is work causing you stress? Then "Desktop Yoga" is perfect for you. By attending the "Desktop Yoga" seminar, you will learn easy breathing techniques and yoga exercises that can be done at your desk. "Desktop Yoga" is a new and innovative form of yoga that can help solve everyday problems. This seminar will be held from 11:00am - 12:00pm on July 6th at the SSPF in Room 2048 and July 7th in the Logistics Bldg. in Room 2548. Please call 867-7829 to sign up.

Fit Over 50: This class is designed for individuals around the age of 50 and over who want to see improvements in their energy level, stress level, balance and coordination, flexibility, strength, endurance, self esteem, self confidence, assertiveness, eating habits, sleep, and overall quality of life. If you want to feel like you are 18 again, join Kay (who didn't start exercising until she was 46) in our Fit Over 50 group exercise class on Tuesdays at 5:00pm.
Contact Kay Tuesday, Wednesday, or Thursday at 867-7829 or 861-3028 for more details.

AUGUST

Men's Health Month

Summer Sport's Challenge: Travel from Antarctica to Malibu Beach, California with this 30-day fitness incentive program. Choose from over fifty "get fit" activities and convert your exercise minutes into miles. In addition, you will learn about sun protection, hydration and safe food handling tips. Watch for details on this program coming out in July or call 867-7829 for more information!

For Your Spirit…

It takes an entire lifetime to live authentically. It is the striving to be authentic that makes you so, not the end result. When you think you've arrived, you realize you've come all this way just to begin again.

— *Sarah Ban Breathnach*

For Your Mind…

Learning to Relax

One of the keys to reducing stress in our lives is learning how to relax, and then doing it on a regular basis. Keep in mind that people have different definitions of relaxation. One person's comfort can be another person's stressor. While a carpenter might think that cooking a meal is a relaxing activity, a cook might prefer to unwind by building a bookshelf or refinishing an antique table.
Relaxation can help you to manage stress and prevent the physical and emotional problems stress can typically cause or aggravate. Digestive problems, general aches and pains, and decreased resistance to colds and the flu are often less common in people who manage stress with relaxation. Learning to unwind can help control compulsive eating, teeth grinding and stammering. Even breathing difficulties, heart palpitations and dizziness can be managed through relaxation techniques. Emotionally, learning to relax can ease depression, irritability, hostility and nervousness.
Take a walk during your lunch break or after dinner, soak in a warm bath before bed or listen to soothing music during your commute to work. A massage can also help you unwind by working the knots out of your muscles. Or you could try a yoga class. The KSC Fitness Centers offer yoga classes every Monday in the O&C Aerobics Studio from 5:00pm – 6:00pm.
Source: The Way to Health and Fitness

The Risks of Being Overweight or Obese

By: Scott Monnett

Most individuals' primary motivation for weight management and exercise is to improve their appearance. What we fail to look at is that there are far more important reasons for weight management and exercise . . . YOUR HEALTH AND WELL-BEING!

The most common definition of obesity is a body fat percentage of more than 25% in males, and more than 32% in females. An estimated one in three Americans has some excess body fat; an estimated 20% are obese. It has long been suspected that obesity is associated with many health risks, including early death. However, it was not until 1985 that the National Institutes of Health first officially recognized the health hazards of obesity. It is now felt that obesity constitutes one of the more important medical and public health problems of our time.

The National Institute of Health and many other agencies have summarized the large number of health problems associated with obesity.

- ***A psychological burden***. Because of the strong pressure from society to be thin, obese people often suffer feelings of guilt, depression, anxiety, and low self-esteem. Obese people are often subjected to prejudice and discrimination. This is considered one of the greatest burdens of obesity.
- ***Increased high blood pressure***. The risk of developing hypertension or high blood pressure increases rapidly with an increase in the amount of body fat.
- ***Increased levels of cholesterol and other lipids in the blood***. The obese, including children, are more likely to have higher blood cholesterol and triglyceride levels.
- ***Increased risk of gallstones***. Obesity is a well-recognized risk factor for gallstones, a disease that affects approximately 10-20% of the U.S. population.
- ***Increased osteoarthritis***. Arthritis and other rheumatic conditions are among the most prevalent diseases in the United States. Overweight people are at high risk of osteoarthritis in the knees and hips.
- ***Increased diabetes***. The prevalence of diabetes is high among the overweight and obese, because of the poor balance between the amount of blood sugar and insulin in the body.
- ***Increased cancer***. An American Cancer Society study involving one million men and women showed that obese males had a higher mortality rate from cancer of the colon, rectum, and prostate. Obese females had a higher mortality rate from cancer of the gallbladder, bile ducts, breast, uterus, and ovaries.
- ***Increased heart disease***. Obese people have more of the typical risk factors for heart disease (high blood pressure and serum cholesterol levels), and as a result they die at a higher rate.

So what is the answer to reducing the health problems associated with being overweight or obese: healthy eating and physical activity. Moderate fat weight loss through a healthy diet and exercise has been reported to lower the health risks and medical problems in 90% of overweight patients, improving their heart function, blood pressure, glucose tolerance, cholesterol levels, as well as making them less likely to die of cancer or heart disease.

Tips on how to reduce your risk of health problems related to obesity.

- Watch what you eat. Consult a nutritionist to set up a diet that will help you lose weight, but at the same time be healthy for you.
- Exercise. The President's Council on Physical Fitness and Sports recommends at least 20 minutes of exercise three or more times a week. Consult with a personal trainer to set up an exercise program that will give you the most results.
- Find a source of support, like a spouse, friend, or someone who has the same or similar goals as you, or join a fitness facility.

Diabetics: Start Walking

Did you know that exercise can help regulate blood sugar levels in people with diabetes? Taking a few moderate walks each week can lower the need for insulin, and a one-hour walk each day may prevent the chance of getting Type 2 Diabetes. In addition, exercise can lower blood pressure, relieve stress and help manage weight.

Breast Cancer: Are You At Risk

By: Meghan Albright

Did you know…

Breast cancer is the leading cause of cancer deaths among women who are age 40 to 59? And breast cancer is the most common form of cancer in women in the United States? This year 182,800 new cases of breast cancer will be diagnosed and 40,800 of these women will die from the disease. In the U.S. alone, one out of nine women will develop breast cancer in her lifetime. This year, every three minutes, a woman will be diagnosed and every 13 minutes a woman will die from breast cancer. A common misconception is that breast cancer is a woman's disease. Men can develop breast cancer as well. This year 1,400 cases will be diagnosed and 400 men will die from the disease.

Who's at risk?

You! Everyone is at risk for breast cancer. The most significant risk factors are being female and getting older. If a woman has a family history of breast cancer, has never had children or had her first child after age 30, if she has had prior treatment with radiation, started to menstruate before age 12, had menopause after age 55, or chooses an unhealthy lifestyle, her risk increases. A woman can't control many of these risk factors, but she can change her lifestyle. Smoking, exposure to pesticides, fumes, food contaminants and alcohol consumption are lifestyle risks that can be avoided. On a good note, most women who are diagnosed with breast cancer survive the disease. If a woman detects the disease early enough, breast cancer has a five-year survival rate of over 95%. Some risk factors for men are aging, a family history of breast cancer, Klinefelter's syndrome, gynecomastia, and testicular dysfunction, as well as the same lifestyle risks as women.

What can you do?

The Susan G. Komen Breast Cancer Foundation recommends the following guidelines:

- Annual screening mammography for women by age 40.
- Clinical breast examination at least every three years beginning at age 20, and annually after age 40.
- Monthly breast self-examination beginning by age 20. When doing the self-examinations, you should feel for any abnormalities or lumps. Hard tissue is the first symptom in 80-90% of breast cancers.

Other symptoms for women are:

- dimpling or flaking of the skin
- nipple discharge or bleeding
- pain in the breast
- change in breast shape or size (including lumps)

Symptoms for men are:

- Nipple discharge (usually bloody)
- Nipple inversion
- Breast lumps
- Local pain, itching, or pulling sensation

It's important to contact your doctor if you experience any of these symptoms. It is also very important to have annual mammograms and do monthly breast self-examinations.

Sources: The Susan G. Komen Breast Cancer Foundation, The American Cancer Society, National Alliance of Breast Cancer Organizations (NABCO)

Ask Miss Muscle

Q: Will warming up and stretching before working out make a difference in my performance?

A: Warming up and stretching are important before a workout. When you elevate your body and muscle temperatures by warming up, a lot of temperature-related changes occur in your body. Blood flow to and from your muscles increases, which means more energy substrates (glucose) are delivered and more metabolic byproducts (lactate) are removed. Hemoglobin and myoglobin (extra sources of oxygen in skeletal muscles) dump off more oxygen to your muscles. The friction inside your muscle fibers is reduced which improves their mechanical efficiency. Transmission speed of nerve impulses, which cause your muscle fibers to contract, increases. Your metabolic rate is elevated, which means you burn more calories.

Stretching can increase a joint's range of motion, causing greater stretch of the involved muscles. As a result, those muscles may produce even greater force. This is because a prestretched muscle has the potential to exert more force than a non-stretched muscle. Elastic energy stored in the muscle tissue during stretching is recovered during the subsequent shortening.

Warm up at an intensity high enough to elicit a change in muscle temperature without being over the anaerobic threshold to prevent lactate buildup. In other words, don't wear yourself out warming up. Studies show that range of motion can also improve after both warming up and stretching. This doesn't necessarily mean you'll get a 10% bump in your bench press, but weight training is an anaerobic activity, so it's possible that you might be able to squeeze out another rep or two.